OHIO'S ENGINEERING FIRSTS

By GEORGE S. BONN

7. EDUCATIONALLY SPEAKING

OHIO certainly has started a number of things (even a little war or two) and what it hasn't started it has almost always had a hand in developing. A great variety of industries, as we have seen (we hope), have grown up here in Ohio primarily because the people have had enough sense to use profitably the abundant natural resources of the region. What they had they used, and what they didn't have they got.

This same ability for starting things branched out on several occasions into the field of education. People had been going to school for several hundred years and had been going to work for several hundred years more, but it took an Ohio educator to combine school and work in a cooperative system of education. Even though man (or men) had been making ceramic ware for something like a couple thousand years since the time of King Somethingorother I, it took another Ohio educator to establish university courses for the actual study of ceramics. Then again, only two schools in the country offer four-year courses in optometry or applied optics, and one of these is in Ohio. No, Ohio is not educationally lax, either.

Cincinnati's "Co-op" College

The University of Cincinnati has at least two outstanding firsts that are mentionable engineeringly. First, it was the first municipally owned university founded in the United States, and second, it was the originator of the world-famous cooperative system of teaching enabling students to combine technical theory with practical experience. Incidentally, both the University of Cincinnati and The Ohio State University were organized the same year, 1870.

Back in 1906 Dean Herman Schneider of the College of Engineering at Cincinnati put into effect the nation's first cooperative instruction in chemical, electrical, and mechanical engineering. A little later aeronautical, civil, and geological engineering were added to the cooperative list. It was in 1909 that the commerce college and the engineering college combined, forming the present College of Engineering and Commerce.

Under the "co-op" system at the University of Cincinnati the student works a while and studies a while, getting a training in both theoretical and practical engineering. In the beginning the alternate periods were four weeks long, but they have been lengthened within the past year or two. This system permits two sections of students to be enrolled at the same time; while one group works, the other studies, and vice-versa. This last eleven months a year, for five years.

Other departments in the university have since adopted this plan and other universities also have made use of it. Certainly a worth while Ohio first.

Ceramics

Edward Orton, Jr., one of Ohio State's best-known early professors and one-time dean of the College of Engineering, also had the knack of starting things and making them go. For instance, he more than any one else was responsible for the formation of the University's first band. Then, he developed the familiar pyrometric cone which serves as a heat indicator in ceramic-ware kilns. But more important than these was his work in getting started the first ceramic department in any university in the country. It was largely through his efforts that the General Assembly of Ohio passed an act on April 20, 1894, setting up a department of ceramics at The Ohio State University. Because of its subject matter the act usually was referred to as the "Mud Pie Bill," but that didn't bother Professor Orton; naturally enough, Professor Orton became the first head of the department.

The first graduate of the department and consequently the first in the United States was Walter M. Fickes of Steubenville, who received his degree of engineer of mines in ceramics in June, 1900. This date has been verified; but something is nonunderstandable about the fact that the American Ceramic Society was founded in 1899 (according to the society) by (according to a history of the University) a small group of graduates of the department. The history, incidentally, sets the date as 1898 and the place as Pittsburgh. Maybe we shouldn't worry about a year or so. Anyhow, the department of ceramics at Ohio State was the forerunner of other similar departments; a notable Ohio first. The name of the department, by the way, was changed in 1908 to the department of ceramic engineering as a part of the College of Engineering.

Other Ohio Premiereducationalana

Several schools in the United States offer courses in optometry or applied optics, but only Columbia University in New York and The Ohio State University offer four-year courses leading to a degree. Back in August, 1914, the department of physics of Ohio State first offered a course in optometry, mostly at the suggestion (aided by a $2000 gift) of the optometrists of the state. In 1915 the four-year course in applied optics was opened to students.

The curriculum is in the department of physics and astronomy, but it is administered the first two years by the College of Engineering.

The section of Robinson Laboratory (mechanical and electrical engineering) built in 1907 was the first college building in the United States to make use of a so-called saw-tooth roof. Then, the department of engineering drawing at Ohio State was the first department of graphics or drawing to be so named in any of the universities. Just two more Ohio firsts.

One day while hunting for something in the Encyclopedia Britannica (1936 edition, volume 21) we, editorially speaking, happened to see some pictures of variously shaped stadiums. There, page 273, was an aerial view of the Ohio State stadium with this caption below it: "The horseshoe shape is a distinctive feature of this stadium." Another Ohio engineering first getting international attention.

Ohio has originated many other engineering educational ventures in many of its excellent colleges; these few are given just to indicate that the state really has had something to do with the educational development of the country as a whole. Too many people, particularly educators, seem to be running around in educational circles; perhaps Ohio can be of even greater educational service in the future than it has been in the past.

L'envoi

The consistent purpose of this little series of articles has been to make you, as future engineers, aware of the part Ohio has played in the development of the United States through its great variety of important engineering achievements. The motive was not so much *what engineering has done for Ohio,* but rather *what Ohio has done for engineering,* although it is almost impossible to separate the two ideas.

We have tried not to appear to be blowing Ohio's horn; Ohio doesn't need it. The industries discussed were chosen because they were representative types of engineering developments; also because pertinent material was conveniently available. There are many more Ohio engineering firsts than, perhaps, we have suggested; most of those we have mentioned probably could be worked into as many books.

The opportunities in Ohio for further developments, engineering or otherwise, are increasing. Some of us may leave the state, but, as Lucien Seymour has written:

"When the burdens of life I am called to lay down,
I hope I may die in Ohio.
I never could ask a more glorious crown
Than one of the sod of Ohio.
And when the last trump wakes the land and the sea,
And the tombs of the earth set their prisoners free,
You may all go aloft, if you choose, but for me,
I think I'll just stay in Ohio."